

October 08, 2015

MARK PEACOCK
DUKE ENERGY EDWARDSPOINT IGCC
15424 E. STATE ROAD 358
Edwardsport, IN 47528

RE: Project: GW Treatment Profile
Pace Project No.: 50129133

Dear MARK PEACOCK:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kenneth Hunt
kenneth.hunt@pacelabs.com
Project Manager

Enclosures

cc: RANDY MONK, DUKE ENERGY EDWARDSPOINT IGCC
Mr. Rhett Moody, Duke Energy (Edwardsport Generating Station)
BRITTANY SCHOFIELD, DUKE ENERGY
EDWARDSPOINT IGCC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: GW Treatment Profile

Pace Project No.: 50129133

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268

Illinois Certification #: 200074

Indiana Certification #: C-49-06

Kansas Certification #: E-10177

Kentucky UST Certification #: 0042

Kentucky WW Certification #: 98019

Louisiana Certification #: 04076

Ohio VAP Certification #: CL-0065

Oklahoma Certification #: 2014-148

Texas Certification #: T104704355-15-9

West Virginia Certification #: 330

Wisconsin Certification #: 999788130

USDA Soil Permit #: P330-10-00128

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SAMPLE SUMMARY

Project: GW Treatment Profile

Pace Project No.: 50129133

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50129133001	55:Filtered Water 20150929-031	Water	09/29/15 08:50	10/02/15 12:22
50129133002	16:GW Influent 20150929-032	Water	09/29/15 09:30	10/02/15 12:22
50129133003	16:GW IN Process 20150929-033	Water	09/29/15 09:25	10/02/15 12:22
50129133004	55:Filtered Water 20151001-001	Water	10/01/15 10:40	10/02/15 12:22
50129133005	16: GW Influent 20151001-002	Water	10/01/15 10:55	10/02/15 12:22
50129133006	16: GW IN Process 20151001-003	Water	10/01/15 10:50	10/02/15 12:22

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SAMPLE ANALYTE COUNT

Project: GW Treatment Profile

Pace Project No.: 50129133

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50129133001	55:Filtered Water 20150929-031	EPA 200.8	CAW	2
50129133002	16:GW Influent 20150929-032	EPA 200.8	CAW	2
50129133003	16:GW IN Process 20150929-033	EPA 200.8	CAW	2
50129133004	55:Filtered Water 20151001-001	EPA 200.8	CAW	2
50129133005	16: GW Influent 20151001-002	EPA 200.8	CAW	2
50129133006	16: GW IN Process 20151001-003	EPA 200.8	CAW	2

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ANALYTICAL RESULTS

Project: GW Treatment Profile

Pace Project No.: 50129133

Sample: 55:Filtered Water 20150929-031		Lab ID: 50129133001		Collected: 09/29/15 08:50	Received: 10/02/15 12:22	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Arsenic	ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:31	7440-38-2	
Selenium	ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:31	7782-49-2	

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ANALYTICAL RESULTS

Project: GW Treatment Profile

Pace Project No.: 50129133

Sample: 16:GW Influent 20150929-032 **Lab ID:** 50129133002 Collected: 09/29/15 09:30 Received: 10/02/15 12:22 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS								
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic	0.067	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:36	7440-38-2	
Selenium	0.066	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:36	7782-49-2	

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ANALYTICAL RESULTS

Project: GW Treatment Profile

Pace Project No.: 50129133

Sample: 16:GW IN Process		Lab ID: 50129133003		Collected: 09/29/15 09:25	Received: 10/02/15 12:22	Matrix: Water		
20150929-033								
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Arsenic	ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:40	7440-38-2	
Selenium	ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:40	7782-49-2	

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ANALYTICAL RESULTS

Project: GW Treatment Profile

Pace Project No.: 50129133

Sample: 55:Filtered Water 20151001-001		Lab ID: 50129133004		Collected: 10/01/15 10:40	Received: 10/02/15 12:22	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Arsenic	ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:45	7440-38-2	
Selenium	ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:45	7782-49-2	

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ANALYTICAL RESULTS

Project: GW Treatment Profile

Pace Project No.: 50129133

Sample: 16: GW Influent 20151001-002 **Lab ID:** 50129133005 Collected: 10/01/15 10:55 Received: 10/02/15 12:22 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS								
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Arsenic	0.042	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:53	7440-38-2	
Selenium	0.080	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:53	7782-49-2	

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ANALYTICAL RESULTS

Project: GW Treatment Profile

Pace Project No.: 50129133

Sample: 16: GW IN Process 20151001-003		Lab ID: 50129133006		Collected: 10/01/15 10:50		Received: 10/02/15 12:22		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic		ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:58	7440-38-2	
Selenium		ND	mg/L	0.0010	1	10/06/15 09:00	10/06/15 19:58	7782-49-2	

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QUALITY CONTROL DATA

Project: GW Treatment Profile

Pace Project No.: 50129133

QC Batch: MPRP/18106

Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8

Analysis Description: 200.8 MET

Associated Lab Samples: 50129133001, 50129133002, 50129133003, 50129133004, 50129133005, 50129133006

METHOD BLANK: 1395675

Matrix: Water

Associated Lab Samples: 50129133001, 50129133002, 50129133003, 50129133004, 50129133005, 50129133006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	10/06/15 19:18	
Selenium	mg/L	ND	0.0010	10/06/15 19:18	

LABORATORY CONTROL SAMPLE: 1395676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.04	0.037	93	85-115	
Selenium	mg/L	.04	0.038	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1395677 1395678

Parameter	Units	50128700002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	53.5 ug/L	.04	.04	0.090	0.090	90	92	70-130	1	20	
Selenium	mg/L	ND	.04	.04	0.047	0.046	111	107	70-130	3	20	

MATRIX SPIKE SAMPLE: 1395679

Parameter	Units	50129133004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	.04	0.039	97	70-130	
Selenium	mg/L	ND	.04	0.039	96	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: GW Treatment Profile

Pace Project No.: 50129133

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GW Treatment Profile

Pace Project No.: 50129133

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50129133001	55:Filtered Water 20150929-031	EPA 200.8	MPRP/18106	EPA 200.8	ICPM/2103
50129133002	16:GW Influent 20150929-032	EPA 200.8	MPRP/18106	EPA 200.8	ICPM/2103
50129133003	16:GW IN Process 20150929-033	EPA 200.8	MPRP/18106	EPA 200.8	ICPM/2103
50129133004	55:Filtered Water 20151001-001	EPA 200.8	MPRP/18106	EPA 200.8	ICPM/2103
50129133005	16: GW Influent 20151001-002	EPA 200.8	MPRP/18106	EPA 200.8	ICPM/2103
50129133006	16: GW IN Process 20151001-003	EPA 200.8	MPRP/18106	EPA 200.8	ICPM/2103

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Return

[illegible]

ORIGINAL		SAMPLER NAME AND SIGNATURE					Temp In °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
FEDEX-BAS	10-2-15 1222	D. Keedy, R. Monk								
		PRINT Name of SAMPLER:								
		SIGNATURE of SAMPLER:								
		DATE Signed (MM/DD/YY):								

Sample Condition Upon Receipt

Pace Analytical

Client Name:

Duke Energy

Project #

5D129133

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Tracking #: 646745417786

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Date/Time 5035A kits placed in freezer

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other

Thermometer 1 2 3 4 5 6 A B C D E F

Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 18.6°C
(Corrected, if applicable)

Ice Visible in Sample Containers: ☐ yes ☐ no

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 10-2-15 BAS

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
-Includes date/time/ID/Analysis		
All containers needing acid/base pres. have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9. (Circle) <u>HNO3</u> H2SO4 NaOH NaOH/ZnAc
exceptions: VOA, coliform, TOC, O&G		
All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted.		
Residual Chlorine Check (SVOC 625 Pest/PCB 608)		10. Present Absent
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Headspace TCLP Volatiles	<input type="checkbox"/> Yes <input type="checkbox"/> No	12.
Headspace Wisconsin Sulfide / Acidity	<input type="checkbox"/> Yes <input type="checkbox"/> No	13.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Project Manager Review		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	16.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	17.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review:

Kenneth Hunt

Date: 10/2/15

Sample Container Count

CLIENT: Duke Energy

COC PAGE 1 of 1
COC ID# 1950076

Project # 50129133

Sample Line Item	DG9H	AG1U	WG9U	AG0U	R	4/6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	BP3C	BP1U	SP5T	AG2U	pH <2	pH >9	pH >12
1																				✓	
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Container Codes

DG9H	40mL HCL	amber vial	AG0U	100mL	unpreserved	amber glass	BP1N	1 liter	HNO3	plastic	DG9P	40mL	TSP	amber vial
AG1U	1liter	unpreserved	amber glass	AG1H	1 liter	HCL	BP1S	1 liter	H2SO4	plastic	DG9S	40mL	H2SO4	amber vial
WG9U	4oz	clear	soil jar	AG1S	1 liter	H2SO4	BP1U	1 liter	unpreserved	plastic	DG9T	40mL	Na Thio	amber vial
R	terra	core kit	AG1T	1 liter	Na Thiosulfate	amber glass	BP1Z	1 liter	NaOH, Zn, Ac		DG9U	40mL	unpreserved	amber vial
BP2N	500mL	HNO3	plastic	AG2N	500mL	HNO3	BP2A	500mL	NaOH, Asc	Acid plastic	SP5T	120mL	Coliform	Na Thiosulfate
BP2U	500mL	unpreserved	plastic	AG2S	500mL	H2SO4	BP2O	500mL	NaOH	plastic	JGFU	4oz	unpreserved	amber wide
BP2S	500mL	H2SO4	plastic	AG2U	500mL	unpreserved	BP2Z	500mL	NaOH, Zn	Ac	U	Summa	Can	
BP3N	250mL	HNO3	plastic	AG3U	250mL	unpreserved	AF	Air	Filter		VG9H	40mL	HCL	clear vial
BP3U	250mL	unpreserved	plastic	BG1H	1 liter	HCL	BP3C	250mL	NaOH	plastic	VG9T	40mL	Na Thio.	clear vial
BP3S	250mL	H2SO4	plastic	BG1S	1 liter	H2SO4	BP3Z	250mL	NaOH, Zn	Ac plastic	VG9U	40mL	unpreserved	clear vial
AG3S	250mL	H2SO4	glass	BG1T	1 liter	Na Thiosulfate	C	Air	Cassettes		VSG	Headspace	septa vial & HCL	
AG1S	1 liter	H2SO4	amber glass	BG1U	1 liter	unpreserved	DG9B	40mL	Na Bisulfate	amber vial	WGFU	4oz	wide jar w/hexane wipe	
BP1U	1 liter	unpreserved	plastic	BP1A	1 liter	NaOH, Asc	DG9M	40mL	MeOH	clear vial	ZPLC	Ziploc	Bag	